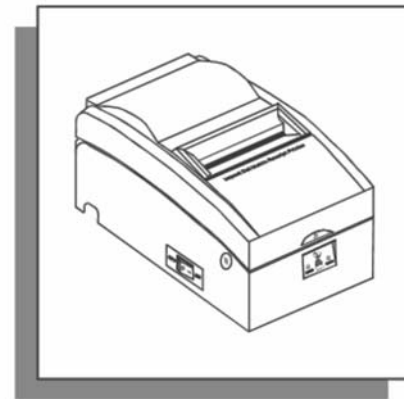


User's Manual

PRP-076 Series Impact Dot-Matrix Printer



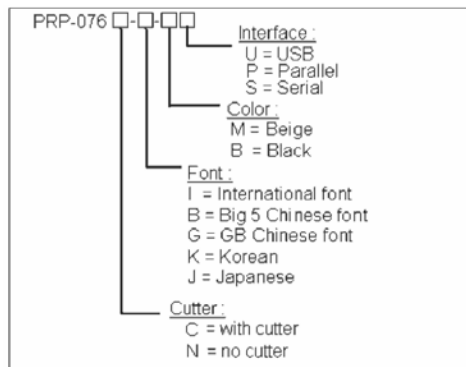
*Specifications subject to
change without notice*

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1. General Information

1.1) Models



Note: International font can be combined with other language, for example: *PRP-076C-BI-MS*, with cutter, Big5+International, beige, serial interface.

1.2) Features

Main Features:

- 3.5 characters line/sec
- 100mm/sec maximum paper feed speed
- Low-noise dot matrix printing
- High reliability due to a stable mechanism
- Command protocol is based on the ESC/POS standard
- Support black mark anchor testing print
- Various Layouts are possible by using page mode
- Repeated operation and copy printing are possible
- Easy paper-roll installation
- Easy paper jam clearance
- Easy maintenance for tasks such as head cleaning
- Built-in interface provides control capability for cash drawer

Available fields:

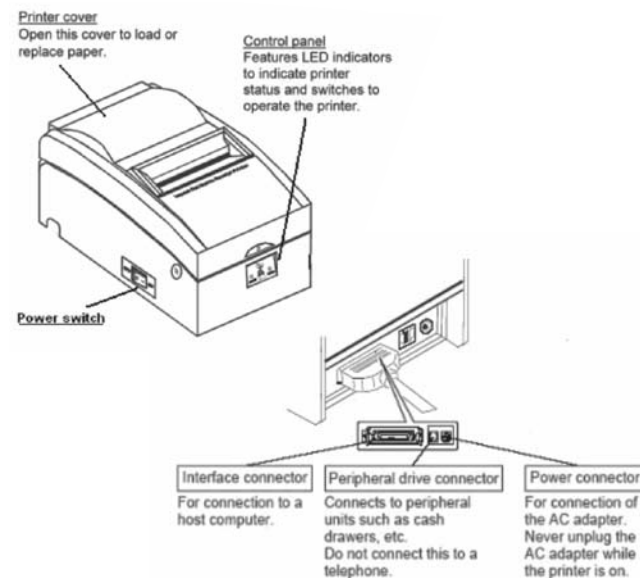
- Print POS system Receipts
- Print EFT POS system Receipts
- Print Gym, Post, hospital, civil aviation system Receipts
- Print Inquiry, Service system Receipts
- Print Instrument test Receipts
- Print Tax, Tab Receipts

2. Quick Start

2.1) Unpacking & Parts Identification

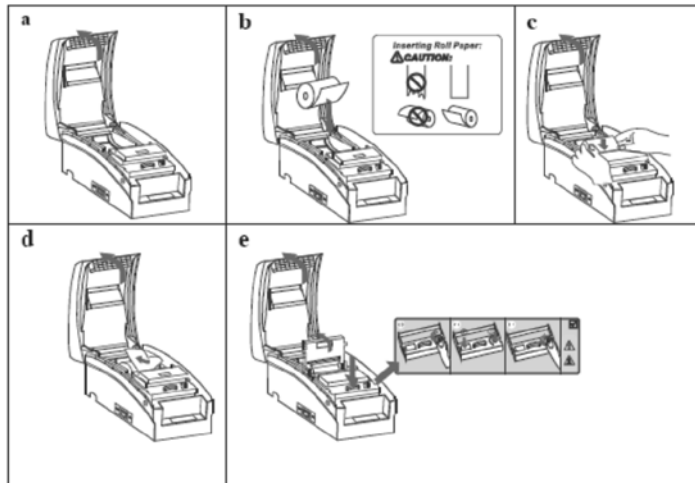
Unpacking:

Parts Identification:



2.2) Loading the Paper Roll and Ink Ribbon

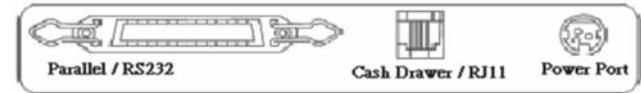
- a. Make sure that the paper roll matches the printer's specification. Do not use paper rolls that have the paper glued to the core because the printer cannot detect the paper end correctly. Important: The printing quality and lifespan of the printer head cannot be guaranteed if any paper other than that recommended is used. Thus, the warranty will be void automatically if any fault occurs due to the use of wrong paper rolls.
- b. Open the top cover
 - Important: Do not open the printer cover when printing is in progress.**
- c. Install the paper roll as the picture showing direction
- d. Pull the paper out of some length to outside, then close the cover.
- e. Open the printer's cover, turn the knob five or six times in the direction of the arrow, insert the ink ribbon, and push the ribbon cassette down until it clicks.



3. Printer Interface and Connection

3.1) Connecting the Interface Cable

Printer Interface:



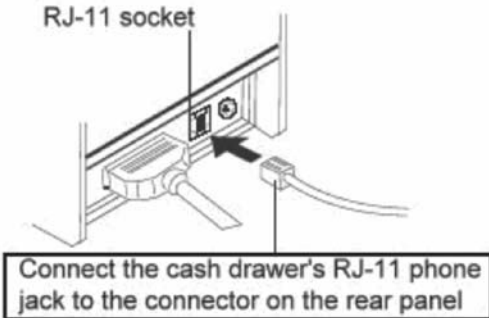
- a) Before connecting/disconnecting the interface cable, make sure that power to the printer and all the devices connected to the printer is turned off.
- b) Connect the interface cable to the connector on the rear panel of the printer.
- c) In the case of a serial interface, tighten the connector screws. In the case of a parallel interface, fasten the connector clasps.



Plug the cable connector securely into the printer's interface connector.

Attach the other end of the cable to the computer.

3.2) Connecting to a Cash Drawer

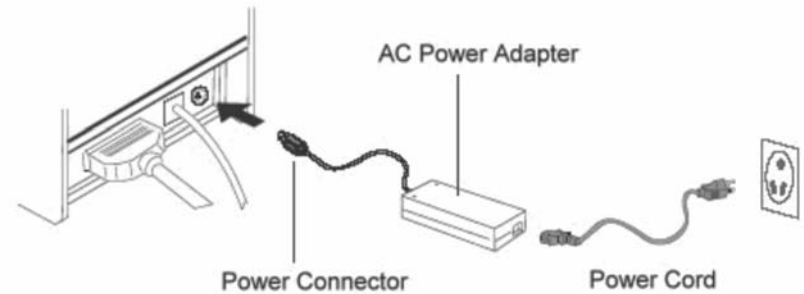


Important:

- Make sure that the printer is turned off and unplugged from the AC outlet and that the computer is turned off before making connections.
- Do not connect a telephone line into the peripheral drive connector. Failure to observe this may result in damage to the printer.

3.3) Connecting the AC Adapter

- a. Connect the AC power cord to the inlet of AC adapter, and then connect the power cord plug to a suitable electrical outlet.
- b. Connect the adapter cable to power connector of printer; make sure the printer power switch is OFF before making any connections.

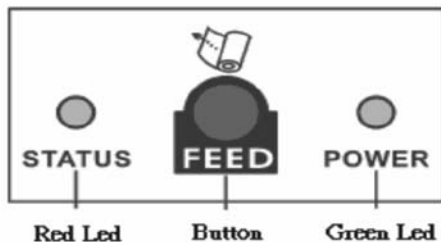


CAUTION: DO NOT USE ANY AC POWER ADAPTERS OTHER THAN SPECIFIED.

- c. Turn on the power switch; the POWER lamp on the control panel will light up.

4. Configuration

Printer Control Panel & Status Indication



Green Led: The POWER light is on whenever the printer is on.
Red Led: This indicates printer online/offline status or an error.
Button: Press the FEED button to feed roll paper.

4.1) Printer Status (Red LED)

- Red light ON: Indicates that the printer is online.
- Red light OFF: Indicates that the printer is offline.
- Red light flashes: Indicates the printer error(s) such as out of paper, paper jammed, or printer cover is not closed properly.

4.2) DIP Switch Settin

The DIP switch panel is locating at bottom of the printer as shown:

DIP Switch Functions:

Switch	Function	ON	OFF
1	Reserved		
2	Reserved		
3	Select Single / Bi-directional printing	Single	Bi-direction
4	Select characters per line (CPL) 7 x 7 / 5 x 7	40CPL/ 33CPL	42CPL/ 35CPL
5	Select Cutter	Enable cutter	Disable cutter
6	Select Cutter Mode	Full cut	Partial cut
7	Enable/Disable Cursor mode	Enable	Disable
8	Baud Rate (*) (RS-232 interface only)	19200 bps	9600 bps

Note: Before configure the DIP switch settings, please first turn the printer power off and remove the paper roll.

(*) Baud Rate is only available for serial interface models.

4.3) Printer Self Test

This is to test whether the printer is working properly or not and also checks the printing quality, firmware version, and DIP switch settings

1. Hold the FEED button first and then turn on the power at the same time, release the button after around 2 seconds.
2. If the printer is working properly, it should then automatically print the self-testing result that indicating the firmware version number, printer connection type, English alphanumeric characters, and few Taiwan fonts.
3. The test print will be ended with the following message:

*** COMPLETED ***

Note: The above procedure does not test parallel or serial ports. Please use communication utility such as Windows HyperTerminal to test the printer connection.

4.4) Hexadecimal Dumping

1) Hexadecimal Dumping

This function prints the data transmitted from the host computer in hexadecimal numbers and in its corresponding characters.

2) Starting hexadecimal dumping

Turn the power on while pressing the FEED button or executing GS (A command. The printer first prints "Hexadecimal Dump" on paper roll and prints the received print data in hexadecimal numbers and in its corresponding characters.

- Note:**
1. When using the hexadecimal dump mode, please set the SW-4 of the DIP switch to OFF.
 2. During hexadecimal dumping, any commands do not function.
 3. If no characters correspond to the data received, the printer prints “.” °

3) Ending hexadecimal dumping

Hexadecimal dumping ends by turning the power off, or pressing the FEED button three times.

<Printing example>

```
Hexadecimal Dump
To terminate Hexadecimal dump,
press FEED button three times

57 65 60 63 6F 6D 65 20      Welcome
54 6F 20 47 61 69 6E 73      To Gains

** Exit Hexadecimal Dump **
```

4.5) Driver Installation

1. To install the PRP-076 driver, please insert the bundled CD disk into the CD-ROM drive.
2. In the CD-Rom menu, please go to Driver > Tysso and double click the SetupEn.exe file to begin the driver installation process and follow the installation instructions.
3. Please choose the OS that matches with your computer system and press Next.
4. Please select PRP-076 Series for Install Module. For Printer Port Setting, if you are connecting the printer to PC COM ports via RS-232 connection, the FlowControl must be set to Hardware. Press Finish when you done all the setting to end installation.

5. Safety and Maintenance

5.1) Safety Information

1. Do not touch the HEAD of printer with anything.
2. Do not touch the cutter blade.
3. Only use the power supply that is come along with the printer.
4. Do not bend the power cord excessively or place any heavy objects onto it.
5. When connecting or disconnecting the plug, always hold the plug-not the cord.
6. Keep the desiccant out of children' s reach.
7. Use only approved accessories and do not try to disassemble, repair or remodel it for yourself.
8. Do not let water or other foreign objects in the printer.
9. Install the printer on the stable surface. -Choose a firm, level surface where the printer will not be exposed to vibration.
10. Do not use the printer when it is out of order. This can cause a fire or an electrocution.
11. Do not connect a telephone line into the peripheral drive connector.
12. We recommend that you unplug the printer from the power outlet whenever you do not plan to use it for long periods.

5.2) Periodical Cleaning

Printed characters may become partially unclear due to accumulated paper dust and dirt. To prevent such a problem, paper dust collected in the paper holder and paper transport section and on the surface of the printer head must be removed periodically. Such cleaning is recommended to be carried out once six month or one million lines.

Cleaning the Paper Holder

Use a soft cloth to remove paper dust from the paper holder and paper transport section.

5.3) Preventing Paper Jams

The paper should not be touched during printing. Shift the paper during paper ejection may cause a feed failure or paper jam.

5.4) Fixing Paper Jam

he Status LED (Red) on the printer control panel will flash with beeps if paper is jammed. Please follow the below instruction to remove paper jam.

- (a) Switch the printer power off.
- (b) Open the printer cover by pushing the Cover-Open button.
- (c) If the printer cover opens, removed the jammed paper gently (take care not to touch the printer head.) And reinstall the paper roll.

Caution:

Since working on the cutter may be dangerous, be sure to turn off the printer first.

Note: Do not apply extreme force to open the front cover to prevent damages to the cutter. If the front cover will not open properly, please contact your dealer.

- (d) Return the cutter to its home-position and release or clean out the jammed paper in inside the front cover. Open the top cover, and then reinstall paper roll.

6. Appendix

1. Product Specifications

1.1) Printing Specifications

- 1) Printing method: 9 pins Impact Dot Matrix
- 2) Print density: 210 dpi (full dot), 420 dpi (half dot)
200 dpi (full dot), 400 dpi (half dot)
- 3) Printing direction: Bidirectional, adjustable by dipswitch
- 4) Printing width: 42CPL (7x7) / 35CPL (5x7)
40CPL (7x7) / 33CPL (5x7)
- 5) Printing speed: 3.5 characters line/sec
- 6) Paper feed speed: 100 mm/sec

NOTE:

There may be variations in printing after switching the mode of the printing speed. To prevent this for logo printing with ESC command, using a downloaded bit image is recommended. Change in printing speed does not occur during down loaded bit image printing. Printing speed may be slower depending on the data transmission speed and the combination of control commands. Low transmission speed may cause intermittent printing. It is recommended to transmit data to the printer as quickly as possible.

1.2) Print font

- 1) ASCII code: 5 x 7 dots, 1.91 (W) x 2.47 (H) mm
7 x 7 dots, 1.59 (W) x 2.47 (H) mm
- 2) Graphic font: 16 x 16 dots, 2.54 (W) x 2.82 (H) mm

1.3) Mechanical Specification

- 1) Weight: 1600g
- 2) Dimension: 225 (L) x 140 (W) x 135 (H) mm

1.4) Paper Specification

- 1) Paper type: Continuous multipart, original plus carbonless copies
- 2) Form: Paper roll
- 3) Paper width: 75 ± 0.5 mm
- 4) Paper roll size: Roll diameter: Maximum 75 mm
Minimum 12 mm

1.5) Interface

- 1) Serial port: Dsub 25 pin female connector, 9600 or 19200 bps baud-rate, none parity, 8 data bits, and 1 stop bit, supports RTS/CTS & XON/XOFF protocol
- 2) Parallel port: 36 pin Centronics connector. 8 bits parallel, supports BUSY/nAck protocol
- 3) Cash drawer port: DC 24V/1A, 6 wires RJ-11 socket

1.6) Electrical Characteristics

- 1) Supply voltage: Input: AC 110V/220V, 50~60Hz
Output: DC 24V/2.5A

1.7) Reliability

- 1) MCBF: 5,000,000 lines
(This is an average failure interval based on failures relating to wear out and random failures up to the life of 15 million lines.)

1.8) Environmental Conditions

- 1) Temperature: Operating: 0 to 50C (41 to 113F)
Storage: -10 to 60C (14 to 122F)
(except paper)
- 2) Humidity: Operating: 10 to 80% RH
Storage: 10 to 90% RH
(except for paper)

NOTE:

If the printer is not used for a long time with paper installed, some part of the printing may be light due to the deformation of the paper. If the printer is not used for a long time with paper installed, be sure to feed paper approximately 30 mm before printing

- 3) Acoustic noise (Operating): When using auto cutter
Approximately 50 dB (Bystander position)
When not using auto cutter: Approximately 40 dB
(Bystander position)

1.9) Installation

- 1) The PRP-076 series printer must be installed horizontally. (Vibration during paper cutting and using a drawer should be considered. Take measures to prevent the printer from moving. Affixing tapes are provided as an option.) An optional hanging bracket can attach the printer to a wall. (Following the procedures describes in the installation manual, install the wall mount and change the location of the paper roll near-end sensor, then install the paper roll stopper and other parts.)

2. CONFIGURATION

2.1) Interface

2.1.1) RS-232 serial interface

2.1.1.1) RS-232 Specifications

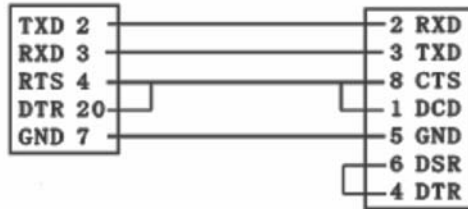
- Data transmission: Serial
- Synchronization: Asynchronous
- Handshaking: DTR/DSR or XON/XOFF control
- Signal levels: MARK = -3 to -15 V: Logic "1"/ OFF
SPACE = +3 to +15 V: Logic "0"/ ON
- Baud rate: 9600, 19200 bps
- Data word length: 8 bits
- Parity Settings: None
- Stop bits: 1 or more
- Connector : Female DSUB-25 pin connector
(printer side)

NOTE: *The data word length, baud rate, and parity depend on the DIP switch settings. The stop bit for the printer side is fixed to 1.*

2.1.1.2 Serial interface connection example

Printer Side DB-25

POS RS-232 Connection Db9



NOTES: Set the handshaking so that the transmit data can be received. Transmit data to the printer after turning on the power and initializing the printer.

2.1.1.3 Interface connector terminal assignments and signal functions

Pin Number	Signal name	Signal Source	Description
2	TXD	Printer	When using XON/XOFF handshake protocol, printer transmits control code XON/XOFF
3	RXD	Host	Printer receives data from host
4	RTS	Printer	Indicates printer current status, whether the printer is Busy or Ready to receive data
7	GND	---	Signal ground
20	DTR	Printer	Same as RTS (pin 4) °

2.1.2) IEEE 1284 Bidirectional Parallel Interface (Parallel Interface Specifications)

2.1.2.1) Parallel Specifications

- Data transmission: Parallel
- Synchronization: Externally supplied nStrobe signals
- Handshaking: nAck and Busy signals
- Signal levels: TTL compatible
- Data word length: 8 bits
- Connector: 36 pins Centronics connector (printer side)

2.1.2.2) Parallel Interface Pin Assignments for Each Mode

Pin	Mode	Source	Description
1	/STB	Host	The computer presents the data on the data lines, and pulses STB
2	DATA0	Host	Indicates the 1st data bit through 8th data bit
3	DATA1	Host	
4	DATA2	Host	
5	DATA3	Host	
6	DATA4	Host	
7	DATA5	Host	
8	DATA6	Host	
9	DATA7	Host	
10	nAck	Printer	Printer acknowledge signal which indicates that printer has received previous data bit
11	BUSY	Printer	Printer is busy and cannot receive data
12	GND	---	Ground
13	Select	Printer	High electric potential
14 · 15	NC	---	No Connect
16 · 17	GND	---	Ground
18	Logic-H	Printer	High electric potential
19~30	GND	---	Ground
31	NC	---	No Connect
32	Nerror (Nfault)	Printer	Printer Error Signal
33	GND	---	Ground
34~36	NC	---	No Connect

2.2 Connectors

2.2.1 Interface Connectors

Refer to Interface explain.

2.2.2 Power Supply Connector

This connector is used to connect the printer to an external power source.

Power Supply Connector Pin Assignments

Pin Number	Signal Name
1	+24 VDC
2	GND
3	NC
Shell	Frame GND

2.2.3 Drawer Kick-out Connector (Modular Connector)

The pulse specified by ESC p or DLE DC4 is output to this connector. The host can confirm the status of the input signal by using the DLE EOT, GS a, or GS r commands.

- 1) Pin assignments: Refer to Table
- 2) Connector model: Printer side: MOLEX 52065-6615 or Rj11 telephone jack
User side: 6-position 6-contact (Rj11 telephone jack)

Drawer Kick-out Connector Pin Assignments

Pin Number	Signal Name	Direction
1	NC	
2	Frame GND	Output
3	NC	
4	Drawer kick-out drive signal	Output
5	NC	
6	NC	

3) Drawer kick-out drive signal

Output signal: Output voltage: Approximately 24 V
 Output current: 1A or less

General Printer Commands

3. COMMANDS LIST

Command	Name
LF	Print and line feed
CR	Print and carriage return
ESC SP n	Set right-side character spacing
ESC ! N	Select print mode(s)
ESC % n	Select/cancel user-defined character set
ESC &	Define user-defined characters
ESC * m nL nH d1...dk	Select bit-image mode
ESC - n	Turn underline mode on/off
ESC 2	Select default line spacing
ESC 3 n	Set line spacing
ESC ? N	Cancel user-defined characters
ESC @	Initialize printer
ESC D [n]k Annual	Set horizontal tab positions
HT n	Print horizontal tab processing
ESC J n	Print and feed paper n x 0.176 mm
ESC K N	Print and reverse paper n x 0.176 mm
ESC R n	Select an international character set
ESC U n	Enable/Disable single print direction
ESC c 5 n	Enable/disable panel buttons
ESC d n	Print and feed n lines
ESC e n	Print and reverse n lines
ESC p m t1 t2	Generate cash drawer pulse
GS (A pL pH n m	Enter hexadecimal dump test mode
GS V m [n]	Select cut mode and cut paper

Command	Name
GS z 0 t1 t2	Set online recovery waiting time
FS ! N	Set print mode(s) for Kanji characters
FS &	Enter Kanji character mode
FS .	Exit Kanji character mode
FS 2 c1 c2 d1...dk	Define user-defined Kanji characters
FS ? c1 c2	Cancel user-defined Kanji characters
FS S n1 n2	Set left- and right-side Kanji character spacing
FS W n	Turn quadruple-size mode on/off for Kanji characters
GS (F pL pH a m nL nH	Set relative black mark anchor position
GS FF	Set black mark anchor to start of printing position

N	Character set
0	U. S. A
1	Franch
2	Germany
3	U. K.
4	Denmark I
5	Sweden
6	Italy
7	Spain I
8	Japan
9	Norway
10	Denmark II

[Default] n = 0

Esc t n	Select Character Code Table			
[format]	ASCII	ESC	t	n
	Hex	1B	74	n
	Decimal	27	116	n

[Range] $0 \leq n \leq 5, 16 \leq n \leq 19$

[Description] Selects a page n from the character code table

International Character Fonts

Note: Commands for International Fonts

Esc t n Select International Character Set

[format]	ASCII	ESC	t	n
	Hex	1B	52	n
	Decimal	27	82	n

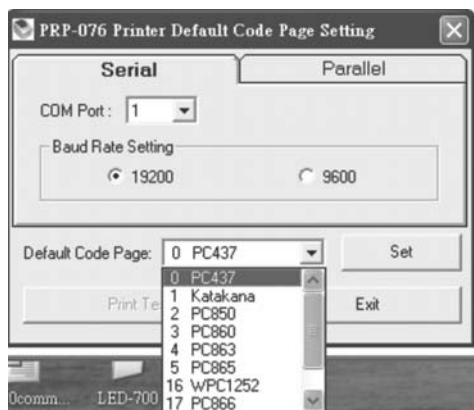
[Range] $0 \leq n \leq 10$

[Description] Selects an international character set n from the following table:

N	Page	comment
0	PC 437 (USA, Standard Europe)	
1	Katakana (Japan)	
2	PC 850 (Multilingual)	
3	PC 860 (Portuguese)	
4	PC 863 (Canadian-French)	
5	PC 865 (Nordic)	
16	WPC 1252	
17	PC 866 (Cyrillic #2)	
18	PC 852 (Latin 2)	
19	PC 858	
	Big 5 Chinese	Optional
	GB Chinese	Optional
	Korean	Optional
	Japanese Kanji (JIS)	Optional

Character code can also be selected by utility program:

1. To install the PRP-076 Default Code Page Setting utility, please insert the bundled CD disk into the CD-ROM drive.
2. In the CD-Rom menu, please go to Receipt Printer > PRP-076 > Code Page and double click the setup.exe file to begin the installation process and follow the installation instructions.
3. After installation is done, go to Program Files > CodePageSet > CodePageSet to start the utility.
4. For Serial interface connection, please select the proper COM port and baud rate which matches the current setting of the printer. For Parallel interface connection, select the proper LPT ports.



Optional multilingual character model supports printing with one of the following characters:

- a. B- Traditional Chinese (Big 5)
- b. G - Simplify Chinese (GB)
- c. K - Korean
- d. J- Japanese Kanji (JIS)

To enable/disable the multilingual character code use the following commands: (*)

FS “&”	Select Multilingual Character Mode ON		
[Format]	ASCII	FS	&
	Hex	1C	26
	Decimal	28	38
[Description]	Enable multilingual character mode		

FS “.”	Select Multilingual Character Mode OFF		
[Format]	ASCII	FS	.
	Hex	1C	2E
	Decimal	28	46
[Description]	Disable multilingual character mode		

(*)Note: This command enable/disable the specific language according to the model (B, G, K or J)

International Character Code:

Country	ASCII code (Hexadecimal)												
	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E	
USA	#	\$	@	[\]	^	`	{		}	~	
France	#	\$	à	°	ç	§	^	`	é	ù	è	..	
Germany	#	\$	\$	Ä	Ö	Ü	^	`	ä	ö	ü	ß	
UK	£	\$	@	[\]	^	`	{		}	~	
Denmark I	#	\$	@	Æ	Ø	À	^	`	æ	ø	å	~	
Sweden	#	¤	É	Ä	Ö	À	Ü	é	ä	ö	å	ü	
Italy	#	\$	@	°	\	é	^	`	à	ò	è	ì	
Spain I	Pt	\$	@	í	ñ	¿	^	`	..	ñ	}	~	
Japan	#	\$	@	[¥]	^	`	{		}	~	
Norway	#	¤	É	Æ	Ø	À	Ü	é	æ	ø	å	ü	
Denmark II	#	\$	É	Æ	Ø	À	Ü	é	æ	ø	å	ü	